Technical Note N-1148

AIRFIELD PAVEMENT CONDITION SURVEY, USNAS POINT MUGU, CALIFORNIA

By

D. J. Lambiotte and R. B. Brownie

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53-125

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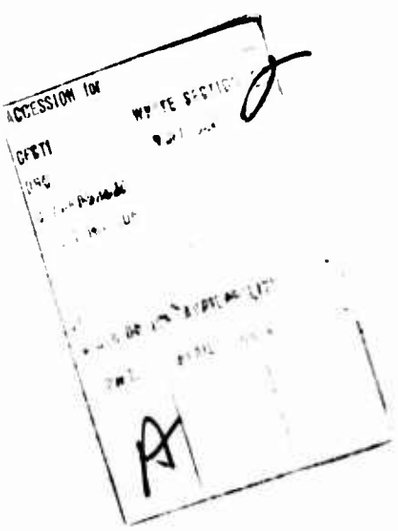
ABSTRACT

The results of a condition survey of the airfield pavements at the U. S. Naval Air Station, Point Mugu, California are presented. The survey established statistically-based conditon numbers (weighted defect densities) which were direct indicators of the condition of the individual asphaltic concrete and portland cement concrete pavement facilities. Additional evaluation efforts included photographic coverage of defect types, preparation of the construction history of the station, compilation of data on current aircraft traffic and aircraft types using the station, performance of runway skid resistance tests, and a study of the requirements for future pavement evaluation efforts.



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CONTENTS

INTRODUCTION

In October, 1969, the Naval Facilities Engineering Command authorized a series of periodic pavement condition surveys to be conducted at Naval and Marine Corps air stations. The purpose of this condition survey task is to determine the suitability of the airfield pavement surfaces for aircraft operational requirements and to establish a uniform basis for maintenance and repair efforts. During the month of August, 1970, a pavement condition survey was conducted at the Naval Air Station, Point Mugu, California. The survey consisted of a sophisticated, statistically-based procedure of pavement defect identification and defect measurement which permitted the establishment of condition numbers (weighted defect densities) which are direct indicators of the surface condition of the asphaltic concrete (AC) and/or portland cement concrete (PCC) airfield pavement facilities. Though different survey techniques were used for the two pavement types, the resulting defect densities often were similar numerically. However, this was coincidental. The defect densities for the two types of pavement are incompatible and must be considered separately. Additional survey efforts included photographic coverage of defect types, preparation of the construction history of the station, compilation of data on current aircraft traffic and aircraft types using the station, performance of runway skid resistance tests, and delineation of requirements for future pavement evaluation efforts at the station.

BACKGROUND

The U. S. Naval Air Station, Point Mugu, is located in Ventura County, ten miles south of Oxnard, California, at an elevation of 13 feet. An aerial photograph of the station is shown in Figure 1. The airfield has two runways, 3-21 and 9-27, which are, respectively, 11,100 and 5,500 feet long.

CONSTRUCTION HISTORY

Original construction of Runway 9-27 consisting of a 5,500 foot strip of pierced steel planking (Marston Matting) was completed in 1944. In 1950, a new asphaltic concrete runway, associated taxiways, and parking apron were constructed on top of the pierced steel plank. In 1952, a major runway (3-21), 7,100 feet in length, and associated

taxiways were constructed. Additional parking aprons were constructed during the following years, and Runway 3-21 and its associated taxiways were extended to 11,100 feet in 1960. A complete history of pavement construction is presented in Appendix A.

CURRENT AIRCRAFT TRAFFIC

A tabulation of the number of aircraft operations for a 12-month period is shown in Table 1. Table 2 lists the aircraft normally based at the station and transient aircraft observed using the station during the period of evaluation and the parking aprons used for each type of aircraft.

CONDITION SURVEY PROCEDURES

The condition survey procedures used in this study are as follows:

Step 1. Preliminary Survey

In the preliminary survey the evaluators made a general and personal inspection of all airfield pavement areas, during which they noted the type and distribution of defects in each facility (runway, taxiway, etc). In addition, a previously-prepared construction history was consulted and areas of different construction and different pavement type (AC or PCC) within a facility were noted. As a result of these efforts, each pavement facility was then divided into "discrete areas" of reasonably similar failure modes for performance of the subsequent sampling and tally or measurement of defects. Thus, if the type and/or number of defects found in one portion of a facility were distinctly different from those found in another portion of that facility, discrete areas were selected on this basis. If, however, the pavement facility contained few defects or if the defects found were similar in type and distribution throughout the facility, each facility was individually divided for survey according to the construction history. Under either criterion, a discrete area may vary, for example, from a 500 foot length of runway or taxiway to the entire length of the facility. Discrete areas selected at NAS Pt. Mugu are shown in Figure 2. Note that all discrete areas are numbered with a system that relates the discrete area to the runway, taxiway, etc., of which it is a part. For example, discrete areas comprising Runway 3-21 are designated R3-1 and R3-2, respectively; discrete areas for Taxiway 3 are T3-1 and T3-2, and so on.

A special survey of singular occurrences of serious defects was made during the preliminary survey. This is necessary because the statistical sampling techniques utilized in the subsequent survey are effective in spotting defects only when such defects are numerous and/or relatively well distributed. This abbreviated special survey

provided information on those infrequent defects, if any, which may present a problem to safe aircraft operation.

Step 2. Statistical Sampling and Defect Survey

After selection of discrete areas, a number of small "sample areas" were chosen within each discrete area. The total number of sample areas was determined by statistical theory, as a function of the relative size of the discrete area. Actual locations of the sample areas were selected at random from the discrete area.

Sample areas in PCC pavements basically consisted of individual slabs, usually 12½ x 15 feet in size. For the convenience of the evaluators, either a single slab or a number of adjacent slabs can be considered as a sample area. Both types of sampling area are shown in schematic in Figure 3. Note from Figure 3 that individual sample slabs and/or sample strips were selected within the center 100 feet (laterally) of runways and within the center 50 feet (laterally) of taxiways by a random selection process. For parking aprons, mats, etc., similar sample areas were selected at random over the entire pavement area.

For AC pavements, sample areas were fifty foot square areas, located as shown in Figure 4. For parking aprons, mats, etc. (not shown in Figure 4) sample areas were fifty feet square, as for other traffic areas, and randomly located over the entire pavement area.

All defects or defected slabs in each of the selected sample areas were noted on appropriate data sheets. For PCC pavement slabs or sample strips either single or multiple occurrences of a given defect type within the slab qualified the slab as a defected slab. For example, one or more spalls qualified a slab as a spalled slab. A crack in the same slab required that it be counted again, this time as a cracked slab. No measurement of length, area, etc., was recorded for PCC pavement defects. When a sample slab strip was chosen for test, the above mentioned tally method (slab by slab) was still utilized.

The defects found in AC sample areas were measured and tallied, rather than merely tallied as were those for PCC pavements. Depending on the type of defect, the total length in feet (for cracks, etc.) or total area in square feet (for pattern cracking, raveling, etc.) was recorded.

The above survey of defects found in sample areas (in each discrete area) are shown in column (c) of the Discrete Area Defect Summary sheets, pages 35 through 74 of this report. Separate summary sheets are provided for portland cement concrete (PCC) and asphaltic concrete (AC) pavements. Total defect counts for the entire discrete area were calculated by a linear extrapolation of the defect data in column (c), and are shown in column (d) of the Discrete Area Defect Summary sheets. To remove the influence of the size of the discrete area on the total defect count (i.e., the bigger the area, the larger the defect count), the total defect count was divided by either the number of slabs in the

discrete area (for PCC pavements) or by the area (in 10 square foot increments) of the discrete area (for AC pavements). This gives a defect density (per slab or per 10 square feet) which is listed in column (e).

Step 3. Defect Severity Weighting System

A weighting system, providing a numerical weight for each type defect in proportion to the relative severity of that defect, was applied in the following manner to each of the defect counts in the discrete area:

$$\text{given defect density} \times \text{weight for that type defect} = \text{weighted defect density}$$

This is accomplished in columns (f) and (g) of the Discrete Area Defect Summary sheets. Next, a total weighted defect density is obtained for each discrete area by summing column (g) of these sheets. Note that a letter suffix is added to each total weighted defect density for the purpose of further distinguishing between asphaltic concrete defect densities (suffix "A") and portland cement concrete defect densities (suffix "C").

The defect weighting guide developed by NCEL assigns greater weights to defects that (1) presently affect the safe operation of aircraft or the cost of aircraft operation; (2) will lead to increased airfield pavement maintenance costs; or (3) will result in significant deterioration of load-carrying capacity of the pavements. The resultant numerical weights were further modified to reflect variations in pavement environment from station to station. For example, higher (more severe) weights were assigned to defects which are affected by factors such as freezing weather, heavy rainfall, or blow sand for surveys of airfields located in areas where these undesirable environmental effects occur. Thus, it can be seen that the higher the numerical weighted defect density, the poorer the condition of the surveyed pavement. Defect severity weights used in calculating weighted defect densities at NAS Pt. Mugu are given in Table 3.

Remarks concerning the general pavement condition and the defects identified are given in narrative form on each Discrete Area Summary sheet. In addition, photographs of typical pavement conditions noted during the survey can be seen in Figures 5 through 23.

Step 4. Facility Summary--Weighted Defect Densities

A final step in providing a numerical condition rating for each facility (runway, taxiway, etc.) is accomplished in the Facility Defect Summary sheets, pages 75 through 81 of this report. Again note that separate sheets have been provided for AC and PCC pavements.

In these sheets the individual weighted defect densities for all discrete areas comprising the entire AC or PCC portion of a facility (runway, taxiway, etc.) are summarized in column (a). When an AC or PCC facility (or portion) has been divided into more than one discrete area for the condition survey, the proportional contribution of each discrete area to the entire AC or PCC facility area is determined in column (b). In column (c) these proportions are applied to the individual discrete area weighted defect densities listed in column (a) and added to obtain an overall average weighted defect density for the entire AC or PCC portion of the facility (marked "Total" in column (c)). When an entire AC or PCC facility (or portion) has been designated as a single discrete area (as often occurs), the proportionality factor in column (b) is obviously 1.00 and the discrete area weighted defect density from column (a) becomes the average weighted defect density for the entire facility (or portion) in column (c).

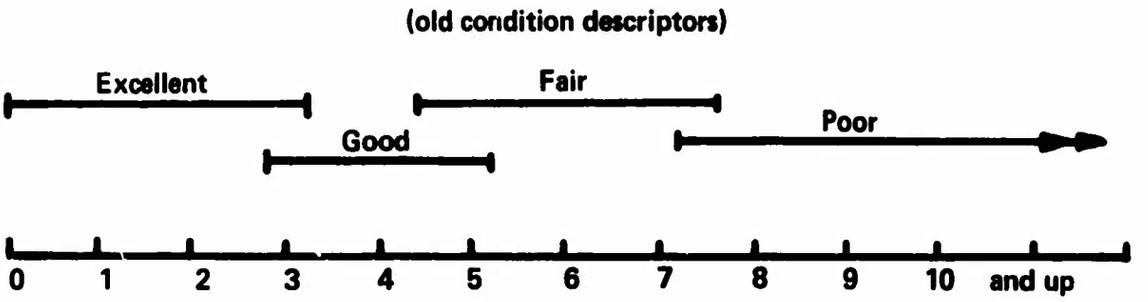
GENERAL COMMENTS ON CONDITION SURVEY PROGRAM

The weighted defect densities, listed in column (a) of the Facility Defect Summary for individual discrete pavement areas and in column (c) as averaged weighted defect densities for entire AC or PCC runways, taxiways, etc. (or portions thereof) represent, numerically, the surface condition of the airfield pavements at the station. As previously stated, the larger defect density numbers indicate basically a greater number and/or severity of defects per unit area of pavement, i.e., a poorer pavement. Thus, they represent the final product of the pavement condition survey. It should be noted specifically, however, that AC and PCC pavement defect densities, although often numerically similar, are obtained by two different condition survey techniques and, as such, are <u>not numerically compatible</u> and <u>must not be combined</u>. (It is largely because of this fact that the letter suffixes "A" and "C" have been affixed to defect densities for AC and PCC pavements respectively.) As an example consider the common case of an AC runway with PCC ends. The condition survey system presented herein provides individual discrete area weighted defect densities for discrete areas selected on <u>both</u> AC and PCC pavements, but provides a <u>separate</u> average weighted defect density for the combined PCC end pavements. It is <u>not</u> possible to combine these defect densities to obtain an averaged AC/PCC defect density for the entire runway. Thus the defect densities for AC and PCC are reported separately, given different letter suffixes, and should include the letter suffix when reference is made to them.

Individual numerical defect densities, however accurately they indicate pavement condition, may mean little to the reader of an individual airfield condition survey report, for he has no basis upon which to judge the relative severity of pavement condition associated with the numbers obtained for his pavements. The primary value of a

numerical condition survey program will be the accumulation of uniformly-obtained, comparative condition data for many airfields which can best be correlated, studied, and used in the decision-making processes at headquarters levels.

For the benefit of the individual reader, however, an effort was made during the first year of pavement condition surveys (FY-70) to relate the numerical condition (defect densities) to the basic subjective condition descriptors (excellent, good, fair, poor, etc.) used in all previous Navy pavement evaluation procedures. Although the subjective, condition-descriptor approach is poorly regarded as a means of comparing pavement condition from one airfield to another, the following diagram may serve temporarily as a rudimentary bridge between the old subjective system and the new (numerical) condition approach:



The numerical defect densities presented in this report were developed to aid in determining the suitability of the airfield pavement surfaces for aircraft operational requirements and to establish an unbiased, uniform basis for initiating maintenance and repair efforts. As such, defect densities are simply visually-determined indicators of the condition of the pavement and do not represent true "condition ratings" in that they do not include factors relating to pavement strengths, traffic usage, etc. It is possible that additional measurements or modifications may be considered necessary or desirable in future condition survey programs.

RESULTS OF CONDITION SURVEY

Weighted defect densities for discrete areas selected on AC pavements at NAS Pt. Mugu ranged from 0.00A (no defects visible) for the best AC discrete area to a worst defect density of 26.50A for a portion of Parking Apron 6. Average weighted defect densities for entire AC portions of the runways at NAS Pt. Mugu were 0.00A for Runway 3-21 and 0.96A for Runway 9-27.

Weighted defect densities for discrete areas selected on PCC pavements ranged from 0.22C for the best PCC discrete area (for a portion of Runway 9-27) to a worst defect density of 8.17C (for a portion of Parking Apron 2A). Average weighted defect densities for entire PCC portions of runways at the station were 0.22C for Runway 9-27 and 2.93C for Runway 3-21.

RESULTS OF ASSOCIATED FIELD TESTS

In order to determine the skid resistance characteristics of the runway pavements at NAS Pt. Mugu, vehicle braking tests were performed using a calibrated decelerometer. Tests were conducted at selected locations on Runway 3-21, at a vehicle speed of 30 miles per hour, and on a wet pavement. Decelerometer readings averaged 27.3 feet per second on the asphaltic concrete and 22.6 feet per second on the portland cement concrete. These readings equate to a friction coefficient between tire and pavement of 0.85 and 0.70, respectively.

Although the Navy, at present, has no official standard or specification for pavement skid resistance, a study of the literature, coupled with the results of limited skid resistance testing performed by NCEL in recent years, indicates that friction coefficients higher than 0.5 may be considered generally acceptable for airfield pavements. Thus, the pavements at NAS Pt. Mugu exhibited an acceptable degree of skid resistance.

RECOMMENDATIONS FOR FURTHER EVALUATION EFFORTS

A pavement evaluation was performed at NAS Pt. Mugu by NCEL in 1965 (see reference 1). No further evaluation effort is recommended at this time.

Table 1. Aircraft Operations Data USNAS Point Mugu, California.

August 1969	5,740
September	5,242
October	7,059
November	6,511
December	5,186
January 1970	5,259
February	7,551
March	10,163
April	7,622
May	9,101
June	8,500
July	7,305
Average operations per month	7,103
Estimated percent of operations by aircraft over 20,000 pounds single gear load:	75%

Table 2. Aircraft Using USNAS Point Mugu, California.

Parking Apron 1	Used for auto parking
Parking Apron 1A	A4, A7, F4, F8, F9, T33, E2A
Parking Apron 2	P2, S2, C130, T28
Parking Apron 2A	A3, A4, F4, F8, F86, C47, C54, C121, C130, C141, P2, P3, S2, BOEING 707
Parking Apron 3	UH 34
Parking Apron 3A	B47, C130
Parking Apron 4	A3, P2, S2, C131
Parking Apron 5	Aircraft taxi through PA5 to PA3A
Parking Apron 6	C130, HH3

Table 3. Defect Severity Weights

Airfield: USNAS Point Mugu, California

Asphaltic Concrete		Portland Cement Concrete	
Defect	Weight	Defect	Weight
Depression	9.0	Depression	9.0
Rutting	9.0	Shattered Slab	9.0
Broken-up Area	9.0	Faulting	8.5
Faulting	8.5	Spalling	7.5
Raveling	7.0	Scaling	7.0
Erosion-Jet Blast	7.5	"D-Line" Cracking	6.5
Longitudinal, Transverse, or Longitudinal Construction Joint Crack	2.5	Pumping	3.5
Pattern Cracking	2.5	Poor Joint Seal	2.5
Patching	3.0	Corner Break	2.5
Reflection Crack	1.0	Intersecting Crack	2.5
Oil Spillage	1.5	Longitudinal or Transverse Crack	1.0

Figure 1. Aerial view, USNAS Point Mugu, California.

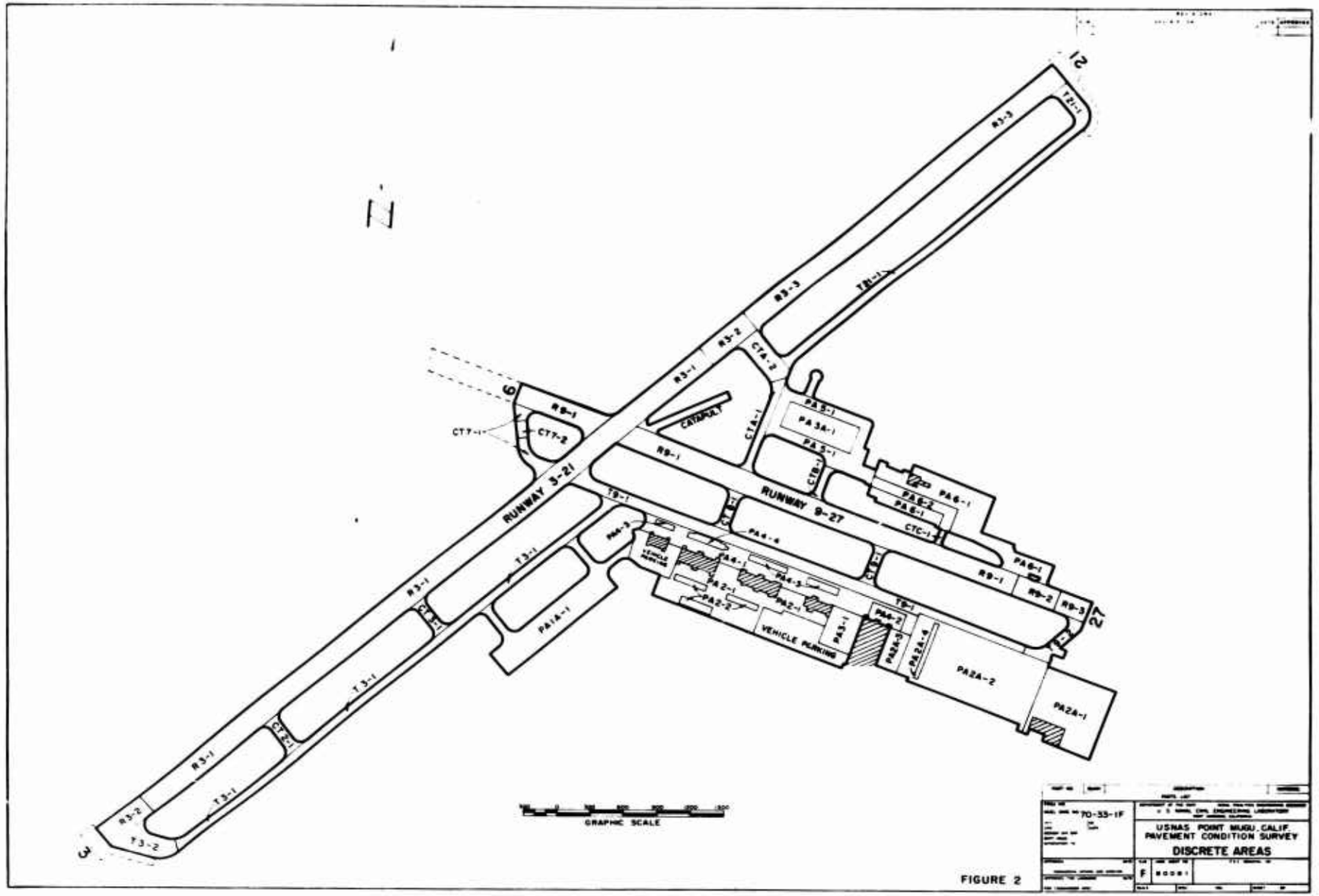

RUNWAY 3-21
RUNWAY 9-27
VEHICLE PARKING
CATWALK
GRAPHIC SCALE
70-33-1F
USNAS POINT MUGU, CALIF.
PAVEMENT CONDITION SURVEY
DISCRETE AREAS

FIGURE 2

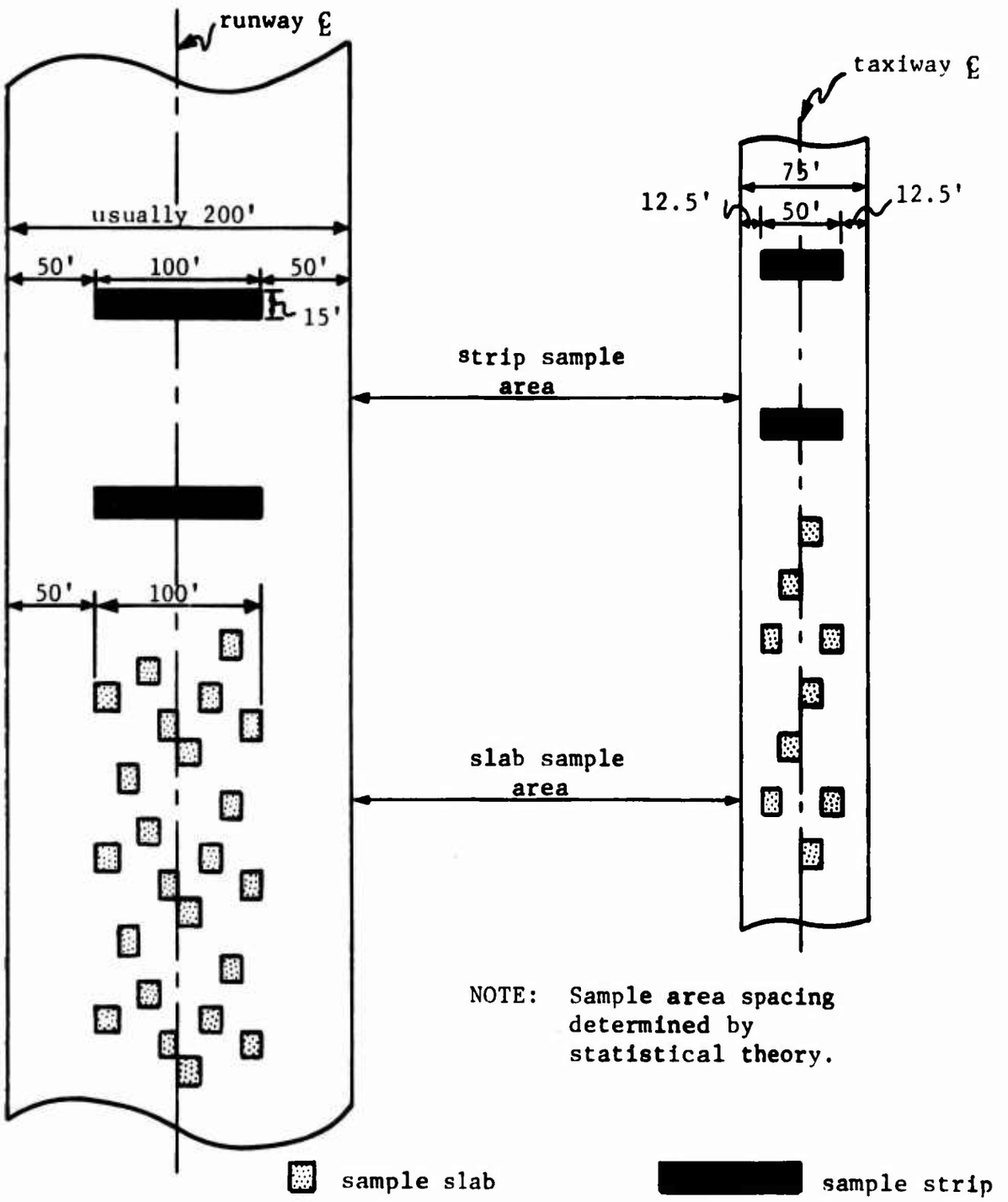


Figure 3. Portland cement concrete sample areas.

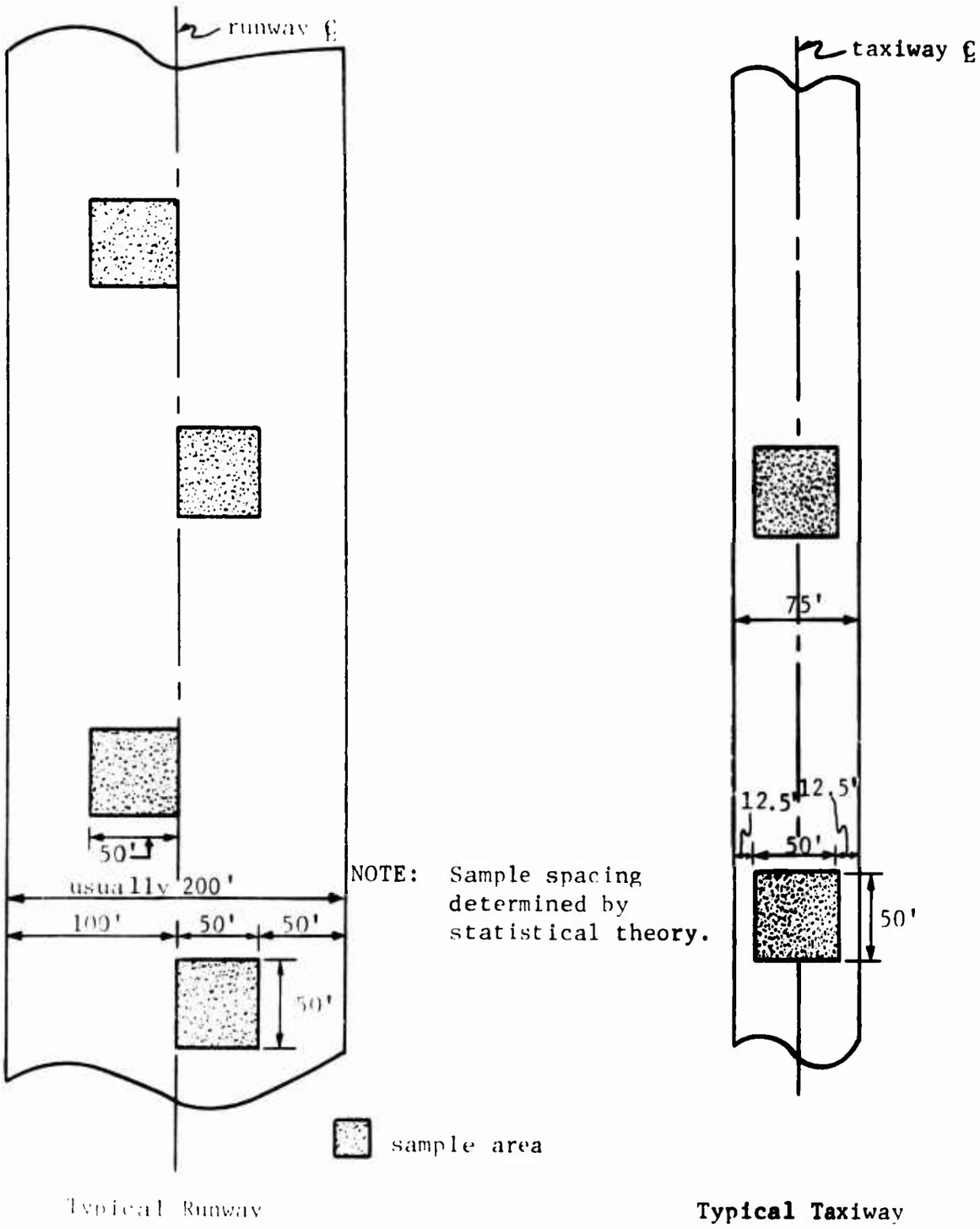


Figure 4. Asphaltic concrete sample areas.

Figure 5. Repaired jet blast spalls, discrete area R3-2.

Figure 6. Failed corner spall repair, discrete area T3-2.

Figure 7. Missing joint seal, discrete area PA2-2.

Figure 8. Missing and poorly bonded joint seal, discrete area PA2A-1.

Figure 9. Severe joint spall, discrete area PA2A-3.

Figure 10. Severe corner spall and missing joint seal, discrete area PA2A-4.

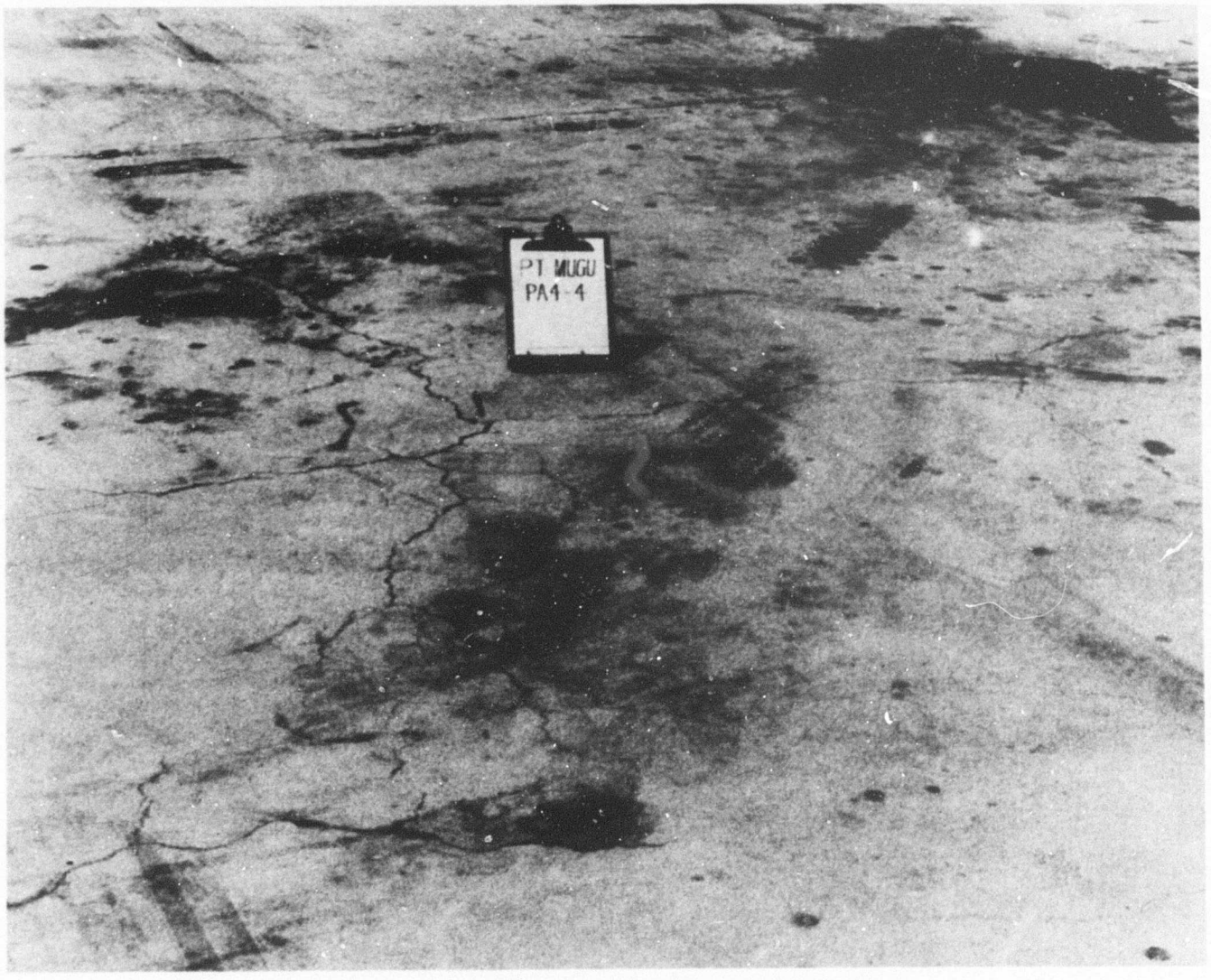


Figure 11. Shattered slabs, discrete area PA4-4.

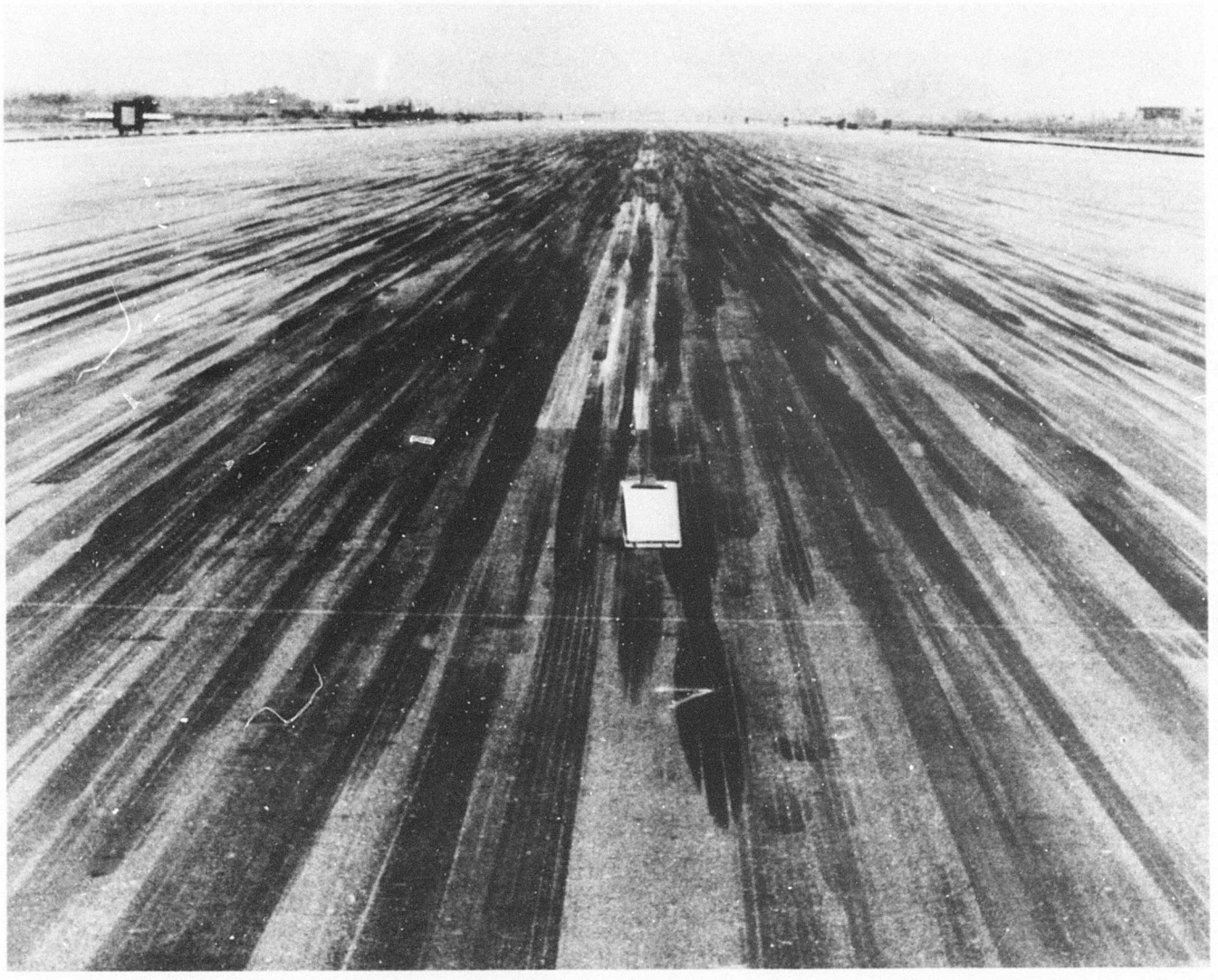


Figure 12. General view showing the excellent condition of discrete area R3-1.

Figure 13. Unsealed longitudinal construction joint crack, discrete area R9-1.

Figure 14. View of oil or fuel spillage, discrete area T3-1.

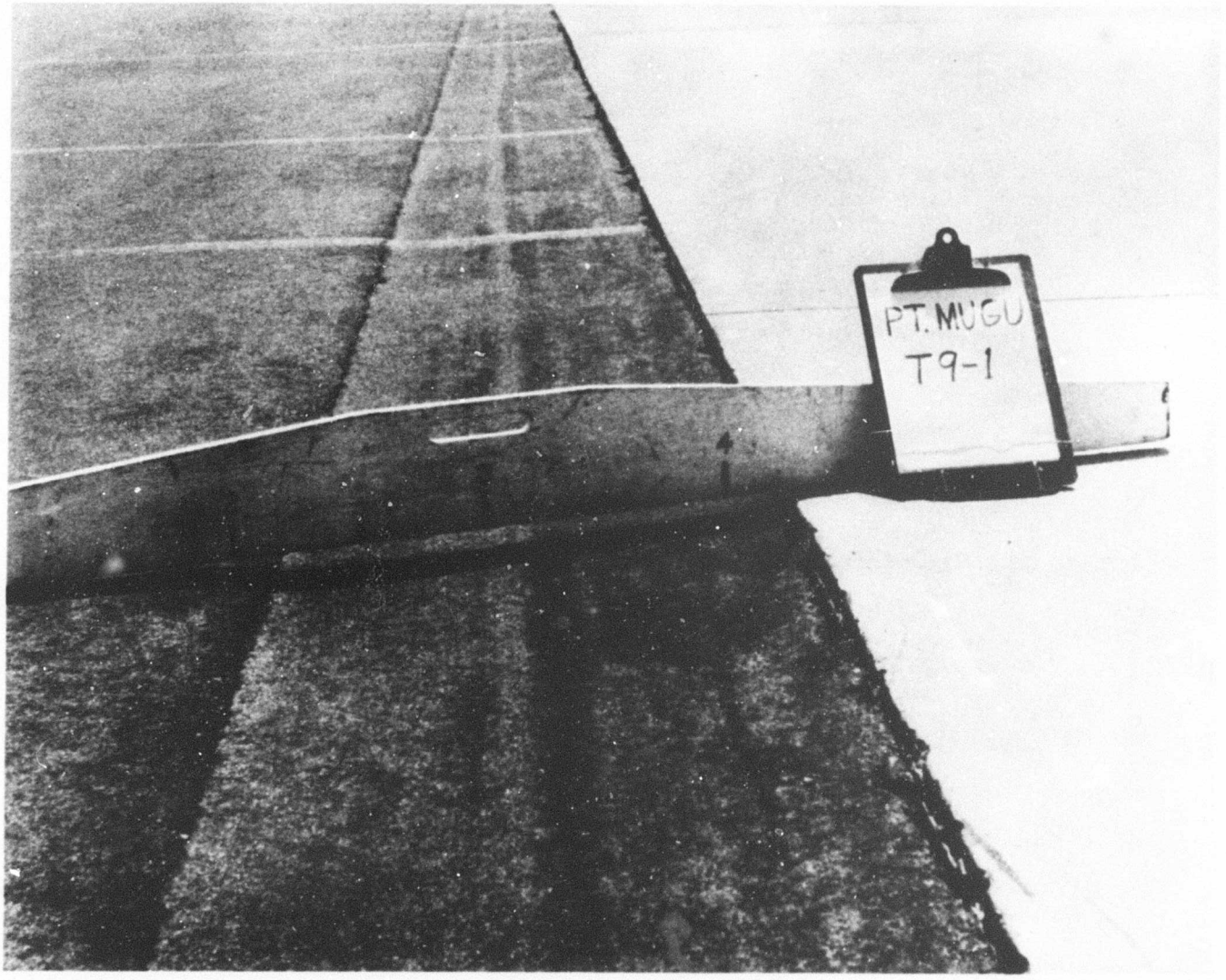


Figure 15. Faulting along taxiway edge, discrete area T9-1.

Figure 16. Pattern cracking, discrete area CTA-1.

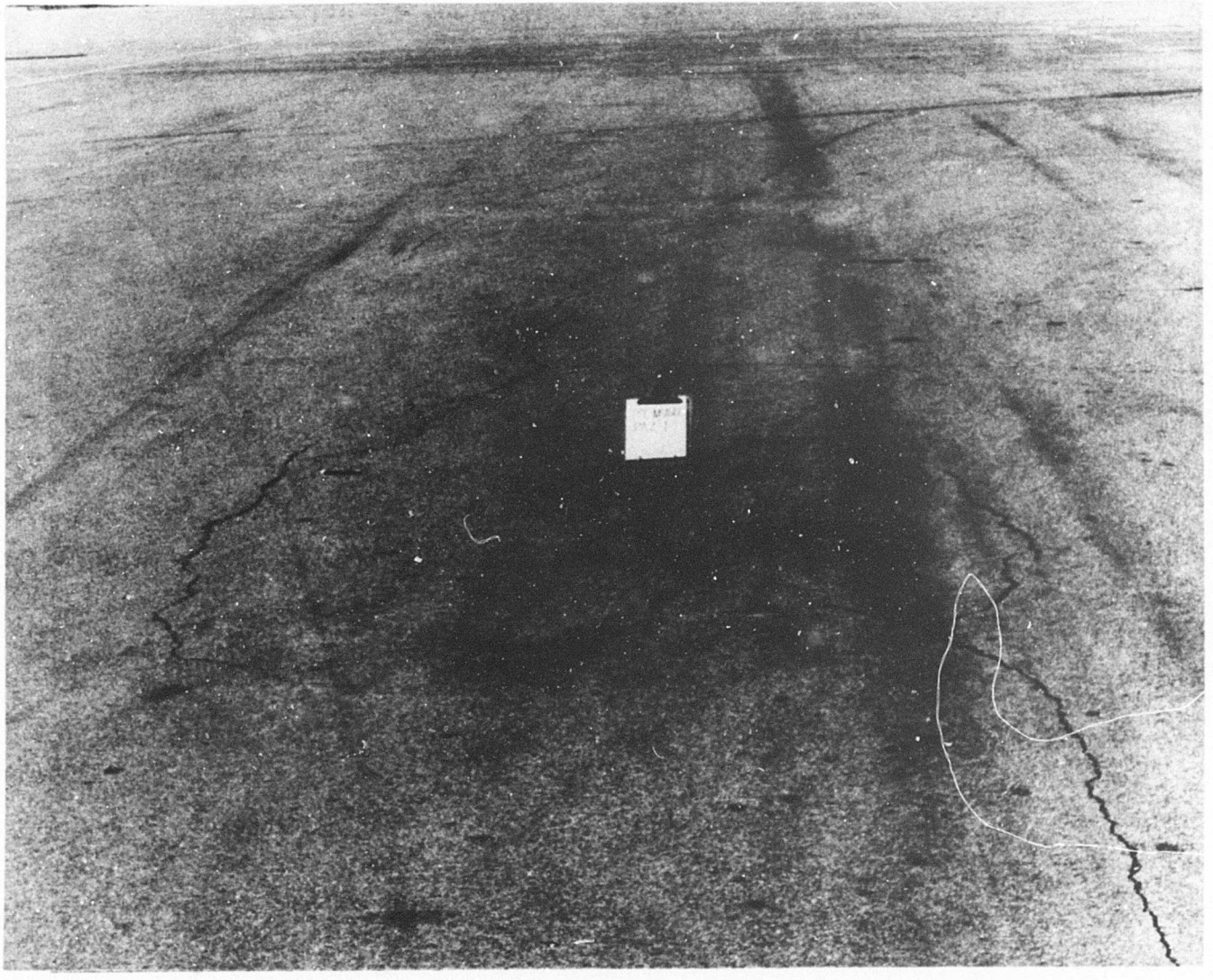


Figure 17. Longitudinal and transverse cracks, discrete area PA2-1.

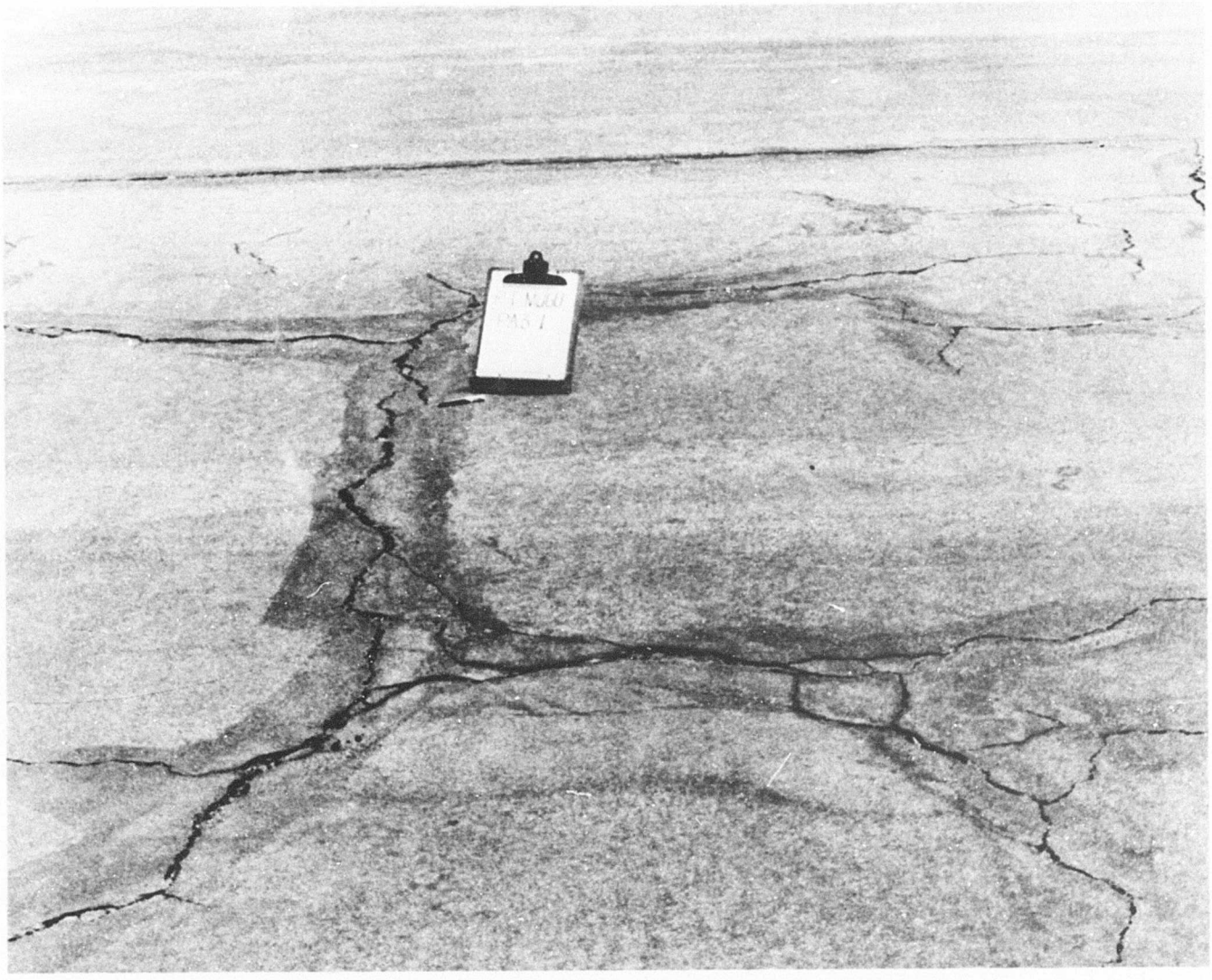


Figure 18. Pattern cracking, discrete area PA3-1.

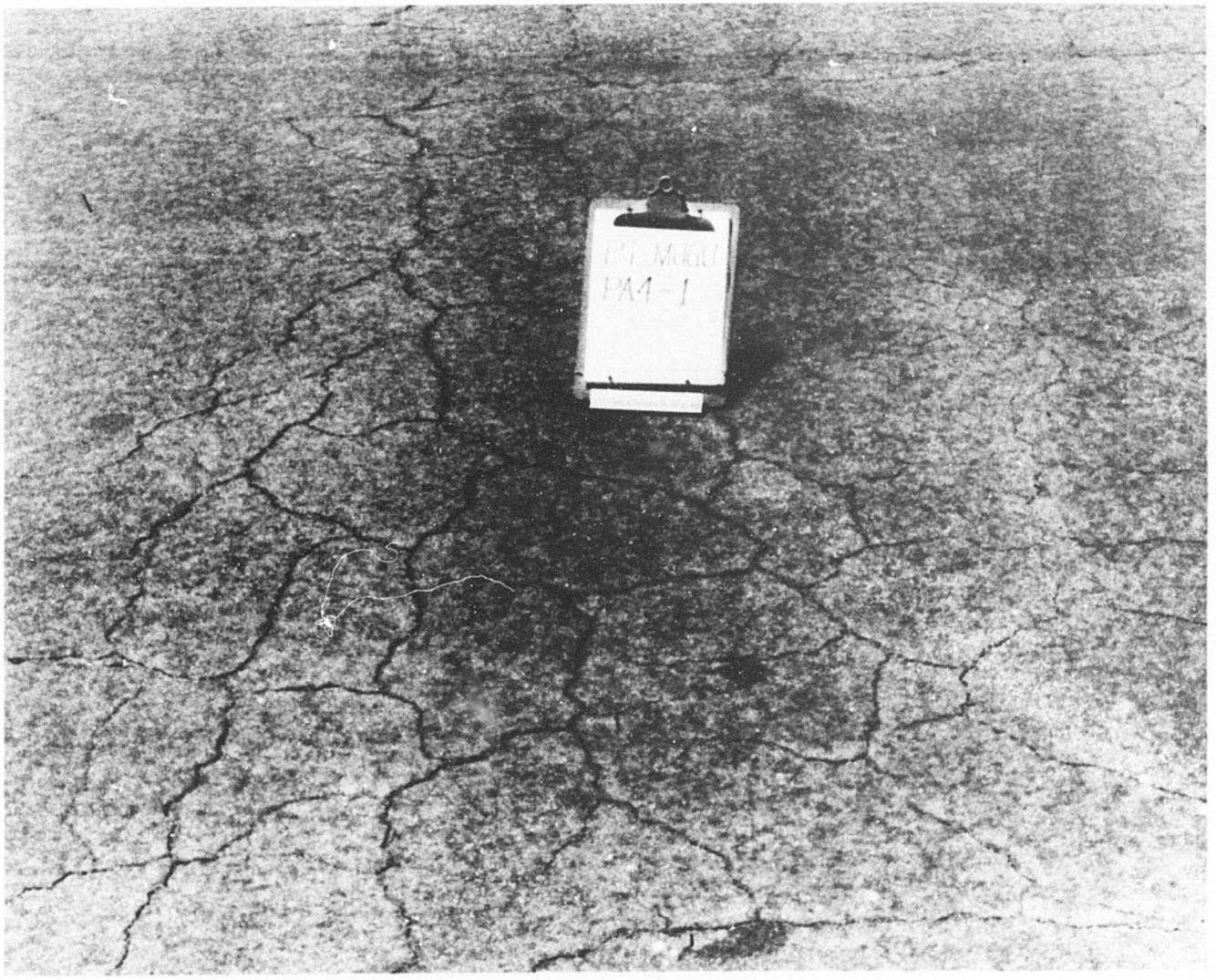


Figure 19. Severe pattern cracking, discrete area PA4-1.

Figure 20. Unsealed longitudinal and transverse cracks, discrete area PA4-2.

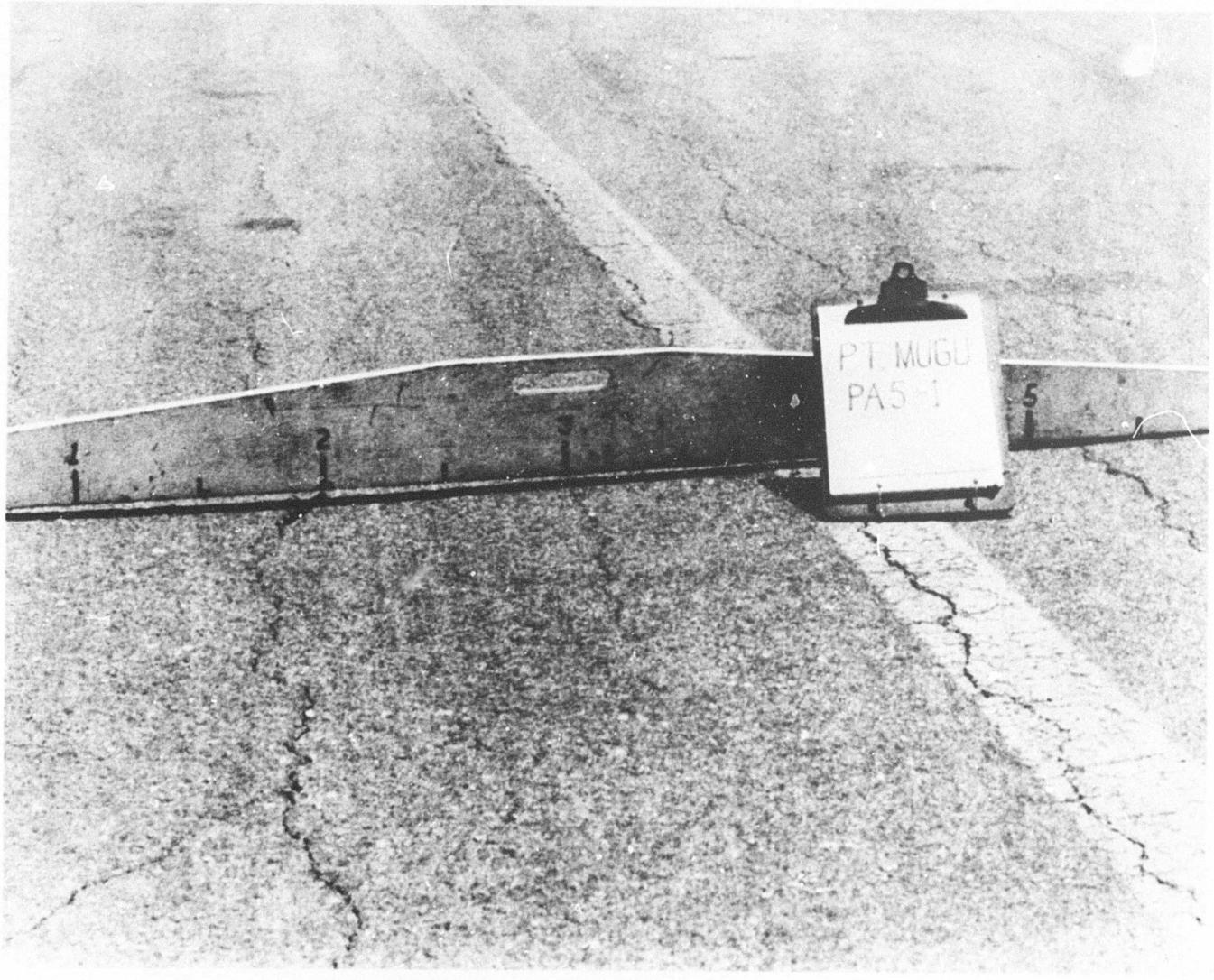


Figure 21. Rutting and pattern cracking, discrete area PA5-1.

Figure 22. Surface softened by fuel or oil spillage, discrete area PA6-2.

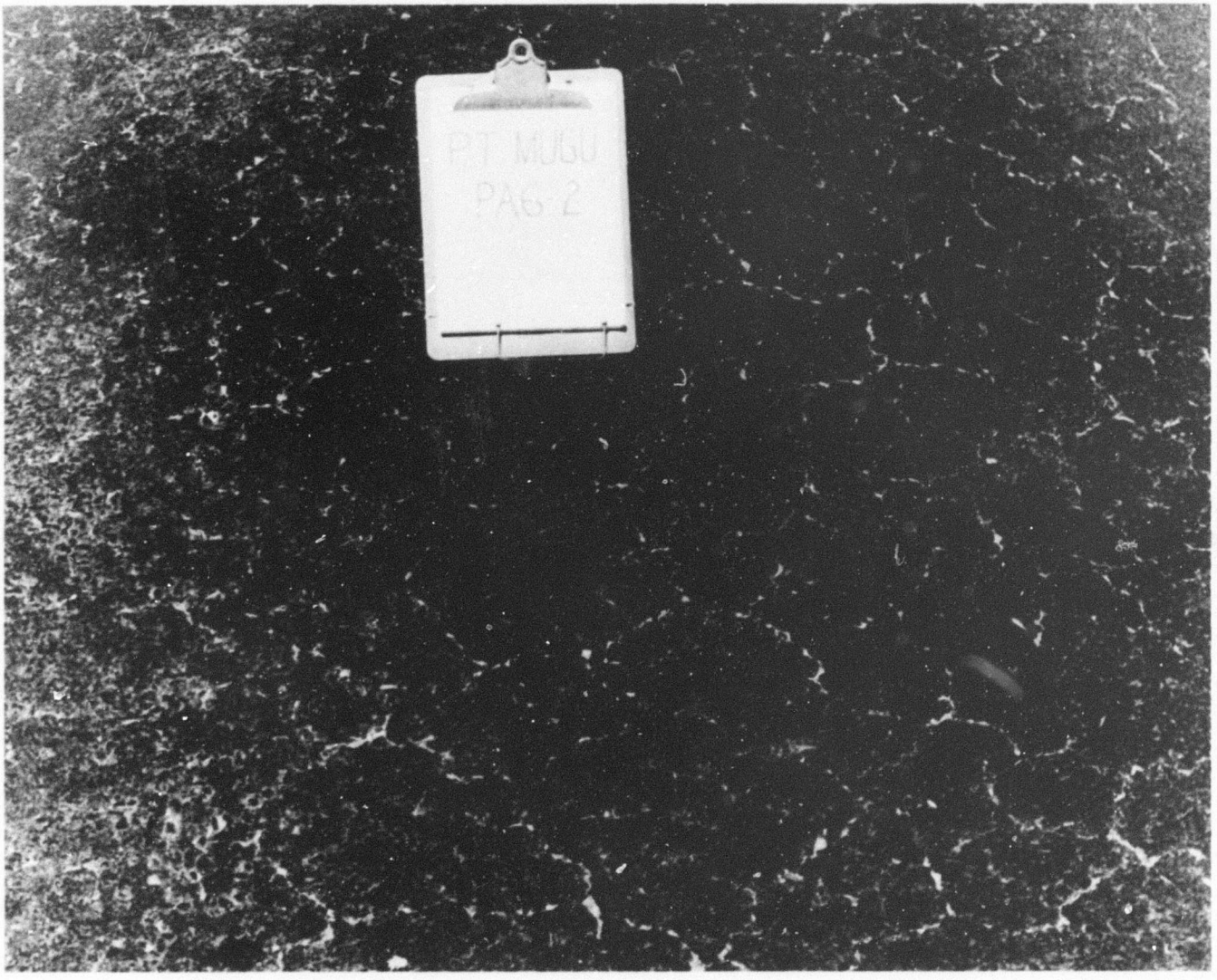


Figure 23. Pattern cracking, discrete area PA6-2.

PORTLAND CEMENT AND ASPHALTIC CONCRETE

DISCRETE AREA DEFECT SUMMARY SHEETS

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Runway 3-21

Discrete Area R3-2 Total Slabs in Discrete Area (a) 528

No. of Slabs Sampled (b) 132 Ratio a/b = 4.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect: c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	50	200	0.379	7.5	2.84
Scaling					
Shattered Slab					
Joint Seal	132	528	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	5.34C ***

Remarks on Pavement Condition

Spalls were up to 6 inches wide and some contained loose chunks. The joint seal was hardened and occasionally was missing in strips up to 2 feet long. Severe surface spalling due to jet blast had taken place at the west end of the runway. Approximately 95% of the surface spalls were repaired. See Figure 5.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Runway 3-21

Discrete Area R3-3 Total Slabs in Discrete Area (a) 1920

No. of Slabs Sampled (b) 174 Ratio a/b 11.0

Defect Type	No. of Sample Slabs w/Defect (c)	Total Slabs w/Defect c x a/b (d)	Defect Density (per slab) d/a (e)	Defect Severity Weight (f)	Weighted Defect Density e x f (g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	20	220	0.115	7.5	0.86
Scaling					
Shattered Slab					
Joint Seal	97	1067	0.556	2.5	1.39
Pumping					
"D-line" cracking					
				Total	2.25C***

Remarks on Pavement Condition

The primary joint seal defect was loss of bond in transverse joints. Some burning and blowing of sealant occurred in the FCLP area. Spalls were generally less than 1 inch wide and 3 inches long.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Runway 9-27

Discrete Area R9-3 Total Slabs in Discrete Area (a) 136

No. of Slabs Sampled (b) 34 Ratio a/b = 4.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect: c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	1	4	0.029	7.5	0.22
Scaling					
Shattered Slab					
Joint Seal					
Pumping					
"D-line" cracking					
				Total	0.22C ***

Remarks on Pavement Condition

Spalls were less than 1/2 inch wide.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Taxiway 3

Discrete Area T3-2 Total Slabs in Discrete Area (a) 132

No. of Slabs Sampled (b) 33 Ratio a/b = 4.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect: c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	5	20	0.152	7.5	1.14
Scaling					
Shattered Slab					
Joint Seal	33	132	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	3.64C***

Remarks on Pavement Condition

Spalls occurred primarily on corners and transverse expansion joints. Spalls were up to 8 inches wide and exhibited loose material. Joint seal was shriveled and had lost bond. See Figure 6.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Taxiway 21

Discrete Area T21-1 Total Slabs in Discrete Area (a) 1012

No. of Slabs Sampled (b) 168 Ratio a/b = 6.02

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect: c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	10	60.20	0.0595	7.5	0.45
Scaling					
Shattered Slab					
Joint Seal					
Pumping					
"D-line" cracking					
				Total	0.45C ***

Remarks on Pavement Condition

Spalls were generally small, less than 1 inch wide on joints and 2 inches on corners.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Taxiway 9-27

Discrete Area T9-2 Total Slabs in Discrete Area (a) 172

No. of Slabs Sampled (b) 43 Ratio a/b = 4

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	3	12	0.070	7.5	0.53
Scaling					
Shattered Slab					
Joint Seal					
Pumping					
"D-line" cracking					
				Total	0.53C***

Remarks on Pavement Condition

Spalls were less than 1 inch wide.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway 7

Discrete Area CT7-2 Total Slabs in Discrete Area (a) 40

No. of Slabs Sampled (b) 40 Ratio a/b = 1.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect: c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	22	22	0.550	7.5	4.13
Scaling					
Shattered Slab					
Joint Seal	40	40	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	6.63C ***

Remarks on Pavement Condition

Spalls were up to 2 inches wide and were located primarily on longitudinal construction joints. Joint seal was often missing and had generally lost bond.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway A

Discrete Area CTA-2 Total Slabs in Discrete Area (a) 132

No. of Slabs Sampled (b) 33 Ratio a/b = 4.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect: c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	3	12.0	0.091	7.5	0.68
Scaling					
Shattered Slab					
Joint Seal	31	124	0.939	2.5	2.35
Pumping					
"D-line" cracking					
				Total	3.03C***

Remarks on Pavement Condition

Joint seal was shriveled and contained many embedded stones. Spalls were up to 1 inch wide.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 1A

Discrete Area PA1A-1 Total Slabs in Discrete Area (a) 2216

No. of Slabs Sampled (b) 185 Ratio a/b = 12.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect: c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break	4	48	0.022	2.5	0.06
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	52	624	0.282	7.5	2.12
Scaling					
Shattered Slab					
Joint Seal	185	2216	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	4.68C

...

Remarks on Pavement Condition

Joint seal was hardened and had lost bond. The spalls were generally small, less than 1 inch wide.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 2

Discrete Area PA2-2 Total Slabs in Discrete Area (a) 240

No. of Slabs Sampled (b) 60 Ratio a/b = 4.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect: c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*	4	16	0.067	1.0	0.07
I.C.**					
Depression					
Spalling	16	64	0.267	7.5	2.00
Scaling					
Shattered Slab					
Joint Seal	60	240	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	4.57C***

Remarks on Pavement Condition

Spalls were up to 3 inches wide. Joint seal had lost bond and was occasionally missing. See Figure 7.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 2A

Discrete Area PA2A-1 Total Slabs in Discrete Area (a) 1845

No. of Slabs Sampled (b) 185 Ratio a/b = 10.0

Defect Type	No. of Sample Slabs w/Defect (c)	Total Slabs w/Defect: c x a/b (d)	Defect Density (per slab) d/a (e)	Defect Severity Weight (f)	Weighted Defect Density e x f (g)
Faulting					
Corner Break					
L.C. or T.C.*	3	30	0.016	1.0	0.02
I.C.**					
Depression					
[illegible]	32	320	0.173	7.5	1.30
Scaling					
Shattered Slab					
Joint Seal	185	1845	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	3.82C***

Remarks on Pavement Condition

Spalls were small, generally less than 1 inch wide and contained no loose material. Transverse cracks noted were unsealed. Joint seal had lost bond on one side of most joints. Occasionally the joint seal was missing. See Figure 8.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 2A

Discrete Area PA2A-2 Total Slabs in Discrete Area (a) 3721

No. of Slabs Sampled (b) 189 Ratio a/b = 19.7

Defect Type	No. of Sample Slabs w/Defect (c)	Total Slabs w/Defect: c x a/b (d)	Defect Density (per slab) d/a (e)	Defect Severity Weight (f)	Weighted Defect Density e x f (g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	3	59	0.016	7.5	0.12
Scaling					
Shattered Slab					
Joint Seal	189	3721	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	2.62C***

Remarks on Pavement Condition

Joint seal was hard and loose. Some portions of the sealant were completely missing. Corner spalls noted were generally less than 2 inches on a side.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 2-A

Discrete Area PA2A-3 Total Slabs in Discrete Area (a) 416

No. of Slabs Sampled (b) 104 Ratio a/b = 4.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect. c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*	4	16	0.038	1.0	0.04
I.C.**					
Depression					
Spalling	34	136	0.327	7.5	2.45
Scaling					
Shattered Slab					
Joint Seal	104	416	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	4.99C***

Remarks on Pavement Condition

Joint seal was hardened and missing in many locations. Weeds were growing in some joints. Spalls were up to 6 inches wide and 10 feet long. See Figure 9.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 2-A

Discrete Area PA2A-4 Total Slabs in Discrete Area (a) 164

No. of Slabs Sampled (b) 41 Ratio a/b = 4.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*					
I.C.**					
Depression					
Spalling	31	124	0.756	7.5	5.67
Scaling					
Shattered Slab					
Joint Seal	41	164	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	8.17C ***

Remarks on Pavement Condition

Spalls ranged up to 6" wide and 8 feet long. Loose chunks were noted in most spalls. Joint seal was almost completely gone. See Figure 10.

* Longitudinal crack or transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 3A

Discrete Area PA3A-1 Total Slabs in Discrete Area (a) 900

No. of Slabs Sampled (b) 180 Ratio a/b = 5.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break	3	15	0.017	2.5	0.04
L.C. or T.C.*	5	25	0.028	1.0	0.03
I.C.**					
Depression					
Spalling	21	105	0.117	7.5	0.88
Scaling					
Shattered Slab					
Joint Seal	180	900	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	3.45C ***

Remarks on Pavement Condition

Joint seal was completely missing in strips up to 10 feet long. Other joints contained embedded stones. Spalls were up to 3 inches wide and 4 feet long. Most cracks were unsealed. Numerous slabs had been spalled by jet blast, however all jet blast spalls were successfully repaired.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 4

Discrete Area PA4-3 Total Slabs in Discrete Area (a) 244

No of Slabs Sampled (b) 61 Ratio a/b = 4.0

Defect Type	No of Sample Slabs w/Defect	Total Slabs w/Defect c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L C or T C *	12	48	0.197	1.0	0.20
I C **					
Depression					
Spalling	13	52	0.213	7.5	1.60
Scaling					
Shattered Slab	3	12	0.049	9.0	0.44
Joint Seal	61	244	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	4.74C ***

Remarks on Pavement Condition

This discrete area contained many slabs of varying sizes. Most cracks and shattered slabs appeared to be caused by the odd slab sizes. Joint seal was hardened and had lost bond.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

PORTLAND CEMENT CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 4

Discrete Area PA4-4 Total Slabs in Discrete Area (a) 15

No. of Slabs Sampled (b) 15 Ratio a/b = 1.0

Defect Type	No. of Sample Slabs w/Defect	Total Slabs w/Defect c x a/b	Defect Density (per slab) d/a	Defect Severity Weight	Weighted Defect Density e x f
	(c)	(d)	(e)	(f)	(g)
Faulting					
Corner Break					
L.C. or T.C.*	10	10	0.667	1.0	0.67
I.C.**					
Depression					
Spalling	5	5	0.333	7.5	2.50
Scaling					
Shattered Slab	4	4	0.267	9.0	2.40
Joint Seal	15	15	1.000	2.5	2.50
Pumping					
"D-line" cracking					
				Total	8.07C***

Remarks on Pavement Condition

The 60' x 60' slabs had cracked into several pieces. All cracks were unsealed. Spalls were up to 6 inches wide. See Figure 11.

* Longitudinal crack or Transverse crack

** Intersecting crack

*** Letter suffix "C" represents PCC pavement

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ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Runway 3-21

Discrete Area R3-1 Area of Discrete Area (a) 650,000 ft^2

No. of Sample Areas (b) 15 Ratio: (a/2500b) 17.3

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq ft) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*					
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking					
Rutting					
Raveling					
Erosion - Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	0.00A**

Remarks on Pavement Condition

The surface aggregate of the 1967 overlay was just beginning to become exposed. No measurable defects were found. See Figure 12.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Letter suffix "A" indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Runway 9-27

Discrete Area R9-1 Area of Discrete Area (a) 448,400 ft^2

No. of Sample Areas (b) 15 Ratio: (a/2500b) 12.0

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density: (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	495 ft.	5940 ft.	0.132	2.5	0.33
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking	1107 $ft.^2$	13284 $ft.^2$	0.296	2.5	0.74
Rutting					
Raveling					
Erosion–Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	1.07A**

Remarks on Pavement Condition

The pattern cracking was less than 1/16 inch wide and appeared to be shrinkage cracks. Longitudinal construction joint cracks were open to a maximum width of 1/8 inch. See Figure 13.

* Transverse crack, longitudinal crack or longitudinal construction joint crack.

** Letter suffix "A" indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Runway 9-27

Discrete Area R9-2 Area of Discrete Area (a) 52,500 ft^2

No. of Sample Areas (b) 5 Ratio: (a/2500b) 4.2

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq ft) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*					
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking					
Rutting					
Raveling					
Erosion-Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	0.00A**

Remarks on Pavement Condition

No defects were noted in the overlay placed in 1967.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Letter suffix "A" indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Taxiway 3

Discrete Area T3-1 Area of Discrete Area (a) 257,900 ft^2

No. of Sample Areas (b) 15 Ratio: (a/2500b) 6.9

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density: (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	190 ft.	1311 ft.	0.051	2.5	0.13
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking	80 $ft.^2$	552 $ft.^2$	0.021	2.5	0.05
Rutting					
Raveling					
Erosion- Jet Blast					
Oil Spillage	625 $ft.^2$	4313 $ft.^2$	0.167	1.5	0.25
Broken-up Area					
				Total	0.43A**

Remarks on Pavement Condition

Longitudinal construction joint cracks were open less than 1/16 inch. Pattern cracking occurred along longitudinal construction joints and was unsealed. A strip of oil or fuel spillage has softened the slurry seal slightly. Some slight depressions which were not deep enough to include in the tally survey were found. See Figure 14.

* Transverse crack, longitudinal crack or longitudinal construction joint crack.

** Letter suffix "A" indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Taxiway 9-27

Discrete Area T9-1 Area of Discrete Area (a) 217,400 ft^2

No. of Sample Areas (b) 15 Ratio: (a/2500b) 5.8

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq ft) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	300 ft.	1740 ft.	0.080	2.5	0.20
Reflection Crack					
Faulting		1000 ft.***	0.046	8.5	0.39
Patching		64 ft^2***	0.003	3.0	0.01
Settlement or Depression		124 ft^2***	0.006	9.0	0.05
Pattern Cracking	140 $ft.^2$	812 $ft.^2$	0.037	2.5	0.09
Rutting					
Raveling					
Erosion—Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	0.74A**

Remarks on Pavement Condition

Longitudinal construction joint cracks were open a maximum of 1/8 inch. Patching and settlement occurred where test pits were made. Faulting to a maximum displacement of 2 inches was along Parking Apron 1A. See Figure 15.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Letter suffix "A" indicates asphaltic pavement

***Singular defects

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway 2

Discrete Area CT2-1 Area of Discrete Area (a) 17,500 ft^2

No. of Sample Areas (b) 2 Ratio: (a/2500b) 3.5

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects. (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density: (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*					
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking					
Rutting					
Raveling					
Erosion -Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	0.00A**

Remarks on Pavement Condition

No defects were visible.

* Transverse crack, longitudinal crack or longitudinal construction joint crack.

** Letter suffix A indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway 3

Discrete Area CT3-1 Area of Discrete Area (a) 17,500 ft^2

No. of Sample Areas (b) 2 Ratio: (a/2500b) 3.5

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects: (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*					
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking					
Rutting					
Raveling					
Erosion—Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	0.00A**

Remarks on Pavement Condition

No defects were visible.

* Transverse crack, longitudinal crack or longitudinal construction joint crack.

** Letter suffix "A" indicates asphaltic pavement.

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway 7

Discrete Area CT7-1 Area of Discrete Area (a) 27,500 ft^2

No. of Sample Areas (b) 3 Ratio: (a/2500b) 3.7

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density: (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	60 ft.	222 ft.	0.081	2.5	0.20
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking	600 $ft.^2$	2220 $ft.^2$	0.807	2.5	2.02
Rutting					
Raveling	100 $ft.^2$	370 $ft.^2$	0.135	7.0	0.95
Erosion-Jet Blast					
Oil Spillage					
Broken up Area					
				Total	3.17A**

Remarks on Pavement Condition

Pattern cracking was unsealed and in blocks of 1' x 2'. Longitudinal construction joint cracks were open 1/8 inch. Raveling occurred with the pattern cracking and was 1/2 to 1 inch deep.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Letter "A" indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway 8

Discrete Area CT8-1 Area of Discrete Area (a) 18,000 ft^2

No. of Sample Areas (b) 2 Ratio: (a/2500b) 3.6

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects. (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	100 ft.	360 ft.	0.200	2.5	0.50
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking	150 $ft.^2$	540 $ft.^2$	0.300	2.5	0.75
Rutting					
Raveling					
Erosion–Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	1.25A**

Remarks on Pavement Condition

Longitudinal construction joints were open approximately 1/8 inch. Pattern cracking was in 1 foot blocks.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Letter suffix "A" indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway 9

Discrete Area CT9-1 Area of Discrete Area (a) 18,000 ft²

No. of Sample Areas (b) 2 Ratio: (a/2500b) 3.6

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density: (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	150 ft.	540 ft.	0.300	2.5	0.75
Reflection Crack					
Faulting					
Patching		16 ft.²***	0.009	3.0	0.03
Settlement or Depression		16 ft.²***	0.009	9.0	0.08
Pattern Cracking	60 ft.²	216 ft.²	0.120	2.5	0.30
Rutting					
Raveling					
Erosion - Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	1.16A **

Remarks on Pavement Condition

Longitudinal construction joint cracks were open to a maximum width of 1/8 inch. Patching and settlement was at a test pit location.

* [illegible] [... joint crack]

** [illegible]

*** [illegible]

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway A

Discrete Area CTA-1 Area of Discrete Area (a) 43,300 ft^2

No. of Sample Areas (b) 4 Ratio: (a/2500b) 4.33

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects: (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density: (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	200 ft.	866 ft.	0.200	2.5	0.50
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking	5250 $ft.^2$	22,733 $ft.^2$	5.25	2.5	13.13
Rutting					
Raveling					
Erosion—Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	13.63A**

Remarks on Pavement Condition

Pattern cracking was in approximately 1 foot blocks and was unsealed. The cracks were generally less than 1/16 inch wide. Longitudinal construction joints were open to 1/8 inch. Little of the slurry seal was remaining. See Figure 16.

* Transverse crack, longitudinal crack or longitudinal construction joint crack.

** Letter suffix "A" indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway B

Discrete Area CTB-1 Area of Discrete Area (a) 15,000 ft^2

No. of Sample Areas (b) 2 Ratio: (a/2500b) 3.0

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density: (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	300 ft.	900 ft.	0.600	2.5	1.50
Reflection Crack					
Faulting					
Patching					
Settlement or Depression	500 $ft.^2$	1500 $ft.^2$	1.000	9.0	9.00
Pattern Cracking	1500 $ft.^2$	4500 $ft.^2$	3.000	2.5	7.50
Rutting					
Raveling					
Erosion--Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	18.00A**

Remarks on Pavement Condition

Connecting Taxiway B has apparently received no maintenance and is rarely used. Cracks were open to 1/2 inch. The depressions were 1 inch deep.

* Transverse crack, longitudinal crack or longitudinal construction joint crack.

** Letter suffix "A" indicates asphaltic pavement.

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Connecting Taxiway C

Discrete Area CTC-1 Area of Discrete Area (a) 7,500 ft^2

No. of Sample Areas (b) 1 Ratio: (a/2500b) 3.0

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq ft) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*					
Reflection Crack					
Faulting					
Patching					
Settlement or Depression		16 ft.^{2}***	0.021	9.0	0.19
Pattern Cracking					
Rutting					
Raveling					
Erosion–Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	0.19

Remarks on Pavement Condition

Connecting Taxiway C has received little or no mainte[illegible]. Surface aggregate was exposed. The depression noted was a[illegible] test pit.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Letter suffix "A" indicates asphaltic pavement

***Singular defect.

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 2

Discrete Area PA2-1 Area of Discrete Area (a) 346,496 ft^2

No. of Sample Areas (b) 15 Ratio (a/7500b) 9.2

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) = Ratio	Defect Density (per 10 sq. ft.) 10 d =	Defect Severity Weight	Weighted Defect Density (e) = (f)
	(c)	(d)	(e)	(f)	(g)
TC, LC or LCJ*	239 ft.	22034 ft.	0.636	2.5	1.59
Reflection Crack					
Faulting					
Patching					
Settlement or Depression	30 $ft.^2$	276 $ft.^2$	0.008	9.0	0.07
Pattern Cracking	1996 $ft.^2$	18363 $ft.^2$	0.530	2.5	1.33
Rutting					
Raveling					
Erosion Jet Blast					
Oil Spillage	200 $ft.^2$	1840 $ft.^2$	0.053	1.5	0.08
Broken up Area					
				Total	3.07A**

Remarks on Pavement Condition

Longitudinal construction joint, transverse, and pattern cracking was open 1/4 to 1/2 inch. The oil spillage had softened the pavement surface. A test pit patch settled nearly 1 inch. See Figure 17.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Suffix A indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 3

Discrete Area PA3-1 Area of Discrete Area (a) 111,150 ft^2

No of Sample Areas (b) 10 Ratio (a/2500b) 4.5

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq ft) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	549 ft.	2471 ft.	0.222	2.5	0.56
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking	3185 $ft.^2$	14333 $ft.^2$	1.290	2.5	3.23
Rutting					
Raveling					
Erosion - Jet Blast					
Oil Spillage	900 $ft.^2$	4050 $ft.^2$	0.364	1.5	0.55
Broken-up Area					
				Total	4.34A**

Remarks on Pavement Condition

Longitudinal construction joint cracks were open to a maximum width of 1/4 inch. Pattern cracking was in 1 to 3 foot polygons. See Figure 18.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Letter suffix "A" indicates asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 4

Discrete Area PA4-1 Area of Discrete Area (a) 320,000 ft^2

No. of Sample Areas (b) 15 Ratio (a/2500b) 8.5

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq ft) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	1195 ft.	10158 ft.	0.317	2.5	0.79
Reflection Crack					
Faulting					
Patching	250 $ft.^2$	2125 $ft.^2$	0.066	3.0	0.20
Settlement or Depression	245 $ft.^2$	2083 $ft.^2$	0.065	9.0	0.59
Pattern Cracking	11541 $ft.^2$	97334 $ft.^2$	3.041	2.5	7.60
Rutting					
Raveling	1000 $ft.^2$	8500 $ft.^2$	0.266	7.0	1.86
Erosion - Jet Blast					
Oil Spillage					
Broken-up Area					
				Total	11.04A**

Remarks on Pavement Condition

Pattern cracking was in blocks ranging in size from 6 inches to 5 feet. Pattern cracking was unsealed. Raveling occurred in conjunction with pattern cracking and was 1" deep. Longitudinal and longitudinal construction joint cracks were open to a maximum width of 1/4". Settled areas were up to 1" deep. See Figure 19.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Corrected for A [illegible] asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 4

Discrete Area PA4-2 Area of Discrete Area (a) 40,200 ft²

No of Sample Areas (b) 2 Ratio (a/7500b) 8.04

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) = Ratio	Defect Density (per 10 sq ft) 10 d = e	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or L.C.J.*	900 ft.	7236 ft.	1.8	2.5	4.50
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking	400 ft.²	3216 ft.²	0.80	2.5	2.00
Rutting					
Ravelling					
Erosion - Jet Blast					
Oil Spillage					
Break-up Area					
				Total	6.50**

Remarks on Pavement Condition

Transverse, longitudinal, and longitudinal construction joint cracks occurred equally and were open to 1/2" wide. Pattern cracking was in large 4 x 5 feet blocks and appeared to be caused by shrinkage of the epoxy asphaltic surfacing. See Figure 20.

* Transverse cracks, longitudinal cracks or longitudinal construction joint cracks

** Corrected value. A satisfactory asphaltic pavement

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 5

Discrete Area PA5-1 Area of Discrete Area (a) 240,125 ft^2

No of Sample Areas (b) 14 Ratio (a/2500b) 6.9

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq ft) 10 d/a	Defect Severity Weight	Weighted Defect Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
TC LC or LCJ*	1325 ft.	9143 ft.	0.381	2.5	0.95
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking	5260 ft.^{2}	36294 ft.^{2}	1.511	2.5	3.78
Rutting	1330 ft.^{2}	9177 ft.^{2}	0.382	9.0	3.44
Ravelling					
Erosion Jet Blast					
Oil Spillage					
Broken up Area					
				Total	8.17A

Remarks on Pavement Condition

Longitudinal construction joint and transverse cracks were open 1/8". Pattern cracking was in polygons ranging from 6 inches to 2 feet. Rutting was up to 1 inch deep and occurred where a B47 taxis onto Parking Apron 3A. See Figure 21.

[illegible] Longitudinal cracks or longitudinal construction joint cracks

[illegible]

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 6

Discrete Area PA6-1 Area of Discrete Area (a) 366,250 ft^2

No. of Sample Areas (b) 15 Ratio: (a/2500b) 9.8

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects: (c) x Ratio	Defect Density (per 10 sq. ft.) 10 d/a	Defect Severity Weight	Weighted Defect Density: (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*	640 ft.	6272 ft.	0.171	2.5	0.43
Reflection Crack					
Faulting					
Patching	16 $ft.^2$	157 $ft.^2$	0.004	3.0	0.01
Settlement or Depression					
Pattern Cracking	5790 $ft.^2$	56742 $ft.^2$	1.549	2.5	3.87
Rutting					
Raveling	160 $ft.^2$	1568 $ft.^2$	0.043	7.0	0.30
Erosion–Jet Blast					
Oil Spillage	250 $ft.^2$	2450 $ft.^2$	0.067	1.5	0.10
Broken-up Area					
				Total	4.71A**

Remarks on Pavement Condition

Pattern cracking was in blocks ranging from 6 inches to 2 feet on each side. Most of the pattern cracking was near the Air Force area. Longitudinal instruction joint cracks were open 1/8 inch. Oil spillage has definitely softened the pavement surface.

* Transverse crack, longitudinal crack or longitudinal construction joint crack.

** Letter suffix "A" indicates asphaltic pavement.

ASPHALTIC CONCRETE DISCRETE AREA DEFECT SUMMARY

Airfield NAS Point Mugu Facility Parking Apron 6

Discrete Area PA6-2 Area of Discrete Area (a) 107,400 ft²

No. of Sample Areas (b) 10 Ratio (a/2500b) 4.3

Defect Type	Length or Area of Sampled Defects	Total Length or Area of All Defects (c) x Ratio	Defect Density (per 10 sq ft) 10 d/a	Defect Severity Weight	Weighted Deduct Density (e) x (f)
	(c)	(d)	(e)	(f)	(g)
T.C., L.C. or LCJ*					
Reflection Crack					
Faulting					
Patching					
Settlement or Depression					
Pattern Cracking		***107400 ft.²	10.000	2.5	25.00
Rutting					
Raveling					
Erosion-Jet Blast					
Oil Spillage	2500 ft.²	10750 ft.²	1.000	1.5	1.50
Broken-up Area					
				Total	26.50A**

Remarks on Pavement Condition

This discrete area had a fog seal of some type applied which had apparently resulted in surface pattern cracking. The cracking was in uniform polygons of approximately 1 square foot. Oil or fuel spillage had softened the surface sufficiently to allow aggregate to be dislodged by hand. See Figures 22 and 23.

* Transverse crack, longitudinal crack or longitudinal construction joint crack

** Letter suffix "A" indicates asphaltic pavement

***Entire area is pattern cracked.

PORTLAND CEMENT AND ASPHALTIC CONCRETE

FACILITY DEFECT SUMMARY SHEETS

PORTLAND CEMENT CONCRETE FACILITY DEFECT SUMMARY

Airfield NAS Point Mugu, California

Date Surveyed August 1970

Facility (or portion)	Weighted Defect Density Total	Ratio Concrete Area / Total Facility Area*	Average Weighted Defect Density (a) × (b)
	(a)	(b)	(c)**
[illegible]			
[illegible]	[illegible]	0.22	1.17
[illegible]	[illegible]	0.78	[illegible]
			[illegible]
[illegible]			
[illegible]	[illegible]	1.00	[illegible]
[illegible]			
[illegible]	[illegible]	1.00	[illegible]
[illegible]			
[illegible]	[illegible]	1.00	[illegible]
[illegible]			
[illegible]	[illegible]	1.00	[illegible]
[illegible]			
[illegible]	[illegible]	1.00	[illegible]
[illegible]			
[illegible]	[illegible]	1.00	[illegible]
[illegible]			
[illegible]	[illegible]	1.00	[illegible]

* If facility is mostly constructed of PCC, indicate total facility area. If facility only partly constructed of PCC, indicate total area of PCC portion of facility.

** [illegible] average weighted defect densities [illegible]

PORTLAND CEMENT CONCRETE FACILITY DEFECT SUMMARY

Airfield NAS Point Mugu, California

Date Surveyed August 1970

Facility (or portion)	Weighted Deduct Density Total	Ratio Discrete Area / Total Facility Area*	Average Weighted Deduct Density (a) x (b)
	(a)	(b)	(c)**
Parking Apron 2			
PA2-2	4.57C	1.00	4.57C
Parking Apron 2A			
PA2A-1	3.82C	0.30	1.15
PA2A-2	2.62C	0.60	1.57
PA2A-3	4.99C	0.07	0.35
PA2A-4	8.17C	0.03	0.25
			3.32C
Parking Apron 3A			
PA3A-1	3.45C	1.00	3.45C
Parking Apron 4			
PA4-3	4.74C	0.66	3.13
PA4-4	8.07C	0.34	2.74
			5.87C

* If facility entirely constructed of PCC, indicates total facility area. If facility only partly constructed of PCC, indicates total area of PCC portion of facility.

** Letter suffix 'C' on average weighted deduct densities indicates Portland cement concrete pavements.

ASPHALTIC CONCRETE FACILITY DEFECT SUMMARY

Airfield NAS Point Mugu, California

Date Surveyed August 1970

Facility (or portion)	Weighted Defect Density Total	Ratio: Discrete Area / Total Facility Area*	Average Weighted Defect Density (a) x (b)
	(a)	(b)	(c)**
Runway 3-21			
R3-1	0.00A	1.00	0.00A
Runway 9-27			
R9-1	1.07A	0.90	0.96
R9-2	0.00A	0.10	0.00
			0.96A
Taxiway 3			
T3-1	0.43A	1.00	0.43A
Taxiway 9-27			
T9-1	0.74A	1.00	0.74A
Connecting Taxiway 2			
CT2-1	0.00A	1.00	0.00A
Connecting Taxiway 3			
CT3-1	0.00A	1.00	0.00A
Connecting Taxiway 7			
CT7-1	3.17A	1.00	3.17A

* If facility entirely constructed of AC, indicates total facility area. If facility only partly constructed of AC, indicates total area of AC portion of facility.

** Letter suffix "A" on average weighted defect densities indicates asphaltic concrete pavements.

ASPHALTIC CONCRETE FACILITY DEFECT SUMMARY

Airfield NAS Point Mugu, California

Date Surveyed August 1970

Facility (or portion)	Weighted Defect Density Total	Ratio. Discrete Area / Total Facility Area*	Average Weighted Defect Density (a) x (b)
	(a)**	(b)	(c)**
Connecting Taxiway 8 CT8-1	1.25A	1.00	1.25A
Connecting Taxiway 9 CT9-1	1.16A	1.00	1.16A
Connecting Taxiway A CTA-1	13.63A	1.00	13.63A
Connecting Taxiway B CTB-1	18.00A	1.00	18.00A
Connecting Taxiway C CTC-1	0.19A	1.00	0.19A
Parking Apron 2 PA2-1	3.07A	1.00	3.07A
Parking Apron 3 PA3-1	4.34A	1.00	4.34A

* If facility entirely constructed of AC, indicates total facility area. If facility only partly constructed of AC, indicates total area of AC portion of facility.

** Letter suffix "A" on weighted defect densities indicates asphaltic concrete pavements.

ASPHALTIC CONCRETE FACILITY DEFECT SUMMARY

Airfield NAS Point Mugu, California

Date Surveyed August 1970

Facility (or portion)	Weighted Deflect Density Total	Ratio: Discrete Area / Total Facility Area*	Average Weighted Defect Density (a) x (b)
	(a)**	(b)	(c)**
Parking Apron 4			
PA4-1	11.04A	0.89	9.83
PA4-2	6.50A	0.11	0.72
			10.55A
Parking Apron 5			
PA5-1	8.17A	1.00	8.17A
Parking Apron 6			
PA6-1	4.71A	0.77	3.63
PA6-2	26.50A	0.23	6.10
			9.73A

* If facility entirely constructed of AC, indicates total facility area. If facility only partly constructed of AC, indicates total area of AC portion of facility

** Letter suffix "A" on weighted defect densities indicates asphaltic concrete pavements.

Appendix A

CONSTRUCTION HISTORY

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Appendix A

CONSTRUCTION HISTORY FOR [illegible] Ft. [illegible], California

Item No.	Section From Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
1	Portions of Runway 3-21 and Taxiway J1		
	13" Portland cement concrete	1960	
	12" Subbase (CBR 40 @ 95%)	1960	
2	Portions of Runway 3-21		
	13" Portland cement concrete	1960	
	12" Subbase (CBR 40 @ 95%)	1960	
3	Portions of Runway 3-21, Taxiway J and		
	Connecting Taxiway A		
	10" Portland cement concrete	1943	
	(reinforced)		
	4" Base course	1943	
4	Portion of Runway 3-21		
	3" Asphaltic concrete		1961
	Fog seal		1964
	Slurry seal		1971
	3" Asphaltic concrete	1943	
	9" Crushed gun base	1943	

Appendix A

CONSTRUCTION HISTORY FOR NAS Pt. Mugu, California

Item No.	Section From Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
5	Portion of Runway 3-21		
	2" Asphaltic concrete		1967
	Fog seal		1966
	Slurry seal		1963
	3" Asphaltic concrete	1952	
	12" Crushed run base	1952	
6	Portion of Taxiway J and all of Connecting Taxiway J		
	Slurry seal		1963
	3" Asphaltic concrete	1952	
	9" Crushed run base	1952	
7	Portion of Taxiway J and all of connecting Taxiway J		
	Slurry seal		1963
	3" Asphaltic concrete	1952	
	12" Crushed run base	1952	
8	Portion of Connecting Taxiway A		
	Slurry seal		1963
	3" Asphaltic concrete	1952	
	12" Crushed run base	1952	

Appendix A

CONSTRUCTION HISTORY FOR NAS Pt. Mugu, California

Item No.	Section From Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
9	Portions of Runway 9-27, Taxiway 9-27,		
	Connecting Taxiway 7, and Parking Apron		
	2A.		
	Joints sealed (Runway 9-27 and Taxiway		1968
	9-27 only).		
	10" Portland cement concrete	1950	
	2" Stabilized base	1950	
	12" Dredged sand fill	1950	
10	Portion of Runway 9-27		
	2" Asphaltic concrete		1967
	Fog seal		1966
	Slurry seal		1963
	3" Asphaltic concrete		1950
	9" Stabilized		1950
	6" Dredged sand		
	Marston matting	1944	
	8" Pit run base	1944	

Appendix A

CONSTRUCTION HISTORY FOR NAS Pt. Mugu, California

Item No.	Section From Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
11	Portion of Runway 9-27		
	Fog seal		1966
	Slurry seal		1963
	3" Asphaltic concrete		1950
	6" Stabilized base		1950
	6" Dredged sand		1950
	Marston matting	1944	
	8" Pit run base	1944	
12	Portion of Runway 9-27		
	Fog seal		1966
	Slurry seal		1963
	3" Asphaltic concrete		1950
	9" Stabilized base		1950
	6" Dredged sand		1950
	Marston matting	1944	
	8" Pit run base	1944	
13	Portion of Taxiway 9-27		
	10" Portland cement concrete	1957	
	8" Stabilized base	1957	
	6" Dredged sand	1957	

Appendix A

CONSTRUCTION HISTORY FOR NAS Ft. Ord, California

Item No.	Section From Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
14	Portions of Taxiway No. 2 and Connecting		
	Taxiway 7 and all of Connecting Taxiways		
	8 and 9.		
	Fog seal		1966
	Slurry seal		1965
	4" Asphaltic concrete	1950	
	8" Stabilized Base	1950	
	6" Dredged sand	1950	
15	Parking Apron 3A		
	10" Portland cement concrete	1951	
	4" Crusher run base	1951	
	6" Subbase - 100%	1951	
	6" Subbase - 85%	1951	
	6" Native material	1951	
16	Parking Apron 3, Connecting Taxiway 8,		
	and a portion of Parking Apron 2		

Appendix A

CONSTRUCTION HISTORY FOR [redacted] Ft. [redacted], California

Item No	Section from Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
1:	Portion of Parking Apron 1A		
	10" Portla[redacted] cement concrete	1953	
	(reinforce[redacted]		
	6" crushed rock base	1954	
	6" Graded sand	1954	
18	Portion of Parking Apron 5		
	Runway 2[redacted]		1964
	3" Asphaltic concrete	1953	
	8" Base at 95%	1953	
	6" Subbase at 95%	1953	
	6" Native material	1953	
19	Portion of Parking Apron 1A		
	11" Portland cement concrete	1953	
	6" Subbase	1963	
	6" compacted subgrade	1953	
20	Portion of Parking Apron 6		
	3" Asphaltic concrete	1953	
	8" Base course	1963	
	[redacted] compacted native material	1963	

Appendix A

CONSTRUCTION HISTORY FOR NAS Pt. Mugu, California

Item No.	Section From Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
21	All of Parking Apron 1A and Apron		
	Connecting Taxiways		
	11" Portland cement concrete	1960	
	11" Compacted base	1960	
	6" Native material	1960	
22	Portion of Parking Apron 2A		
	11" Portland cement concrete	1961	
	11" Compacted base	1961	
	6" Native fill	1961	
23	Portions of Parking Aprons 2, 3, and 4.		
	Slurry seal		1963
	3" Asphaltic concrete	1953	
	8" Crusher run base	1953	
24	Portion of Parking Aprons 1, 2, and 4.		
	Portland cement concrete, no		
	construction information available.		

Appendix A

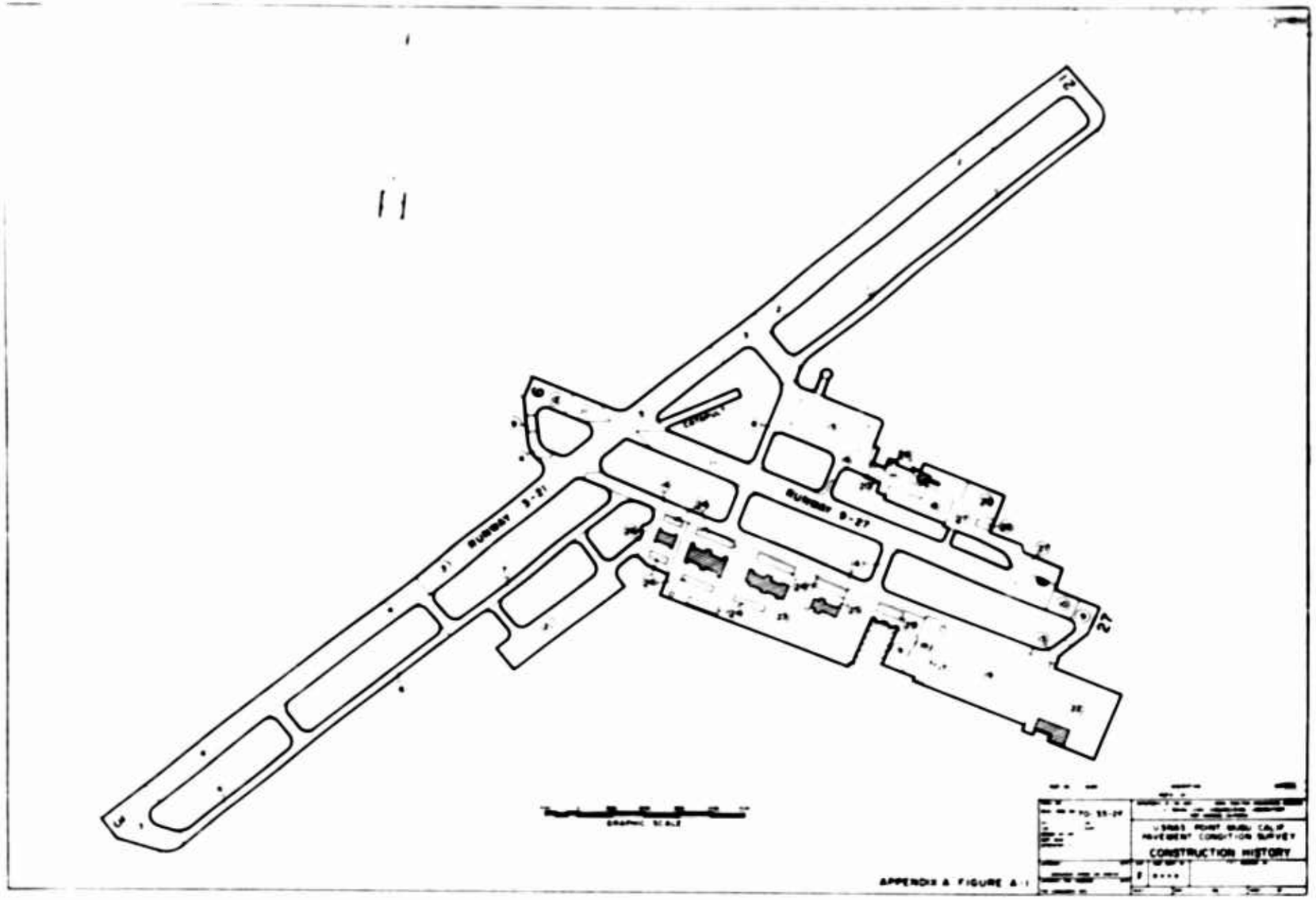
CONSTRUCTION HISTORY FOR NAS Pt. Mugu, California

Item No.	Section From Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
25	Portion of Parking Apron 4		
	Slurry seal		1963
	4" Asphaltic concrete	1953	
	8" Base course	1953	
	8" Subbase	1953	
26	Portions of Parking Aprons 1 and 4		
	Slurry seal	-	1963
	3" Asphaltic concrete	1960	
	9" Select base - 60CBR	1960	
	6" Subbase - 30CBR	1960	
	6" Compacted native material	1960	
27	Portion of Parking Apron 6		
	3" Asphaltic concrete	1959	
	10" Select base	1959	
28	Portion of Parking Apron 6		
	10" Portland cement concrete	1961	
	10" Base	1961	
	6" Compacted native	1961	

Appendix A

CONSTRUCTION HISTORY FOR NAS Pt. Mugu, California

Item No.	Section From Surface to Subgrade	Date Constructed	Date Strengthened or Sealed
29	Portion of Parking Apron 4		
	1" Epoxy asphaltic concrete		1959
	1" Asphaltic concrete		1959
	1" Tar concrete	1951	



APPENDIX A FIGURE A-1

REFERENCES

1. U. S. Naval Civil Engineering Laboratory. Technical Note N-761: Airfield Pavement Evaluation - USNAS Point Mugu, California, by R. J. Lowe and W. H. Chamberlin, Port Hueneme, California, Sep 1965.

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AIRFIELD PAVEMENT CONDITION SURVEY, POINT MUGU, CALIFORNIA

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D. J. Lambiotte and R. D. Brownlie

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The results of a condition survey of the airfield pavements at the U. S. Naval Air Station, Point Mugu, California are presented. The survey established statistically-based condition numbers (weighted deduct densities) which were direct indicators of the condition of the individual asphaltic concrete and portland cement concrete pavement facilities. Additional evaluation efforts included photographic coverage of deduct types, preparation of the construction history of the station, compilation of data on current aircraft traffic and aircraft types using the station, performance of runway skid resistance tests, and a study of the requirements for future pavement evaluation efforts.

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Unclassified
Security Classification

Pavements						
Condition Survey						
Runways						
Taxiways						
Condition Numbers						

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